

REMARKS

The applicants have carefully considered the official action of December 31, 2008. Claims 1, 3, 17, and 19-28 have been amended. In view of the foregoing amendments and the following remarks, the applicants respectfully request reconsideration of this application.

As an initial matter, claims 17 and 19-27 have been amended to recite “a machine-accessible storage medium” per the request of the Examiner.

35 U.S.C. §102 Rejections

Independent claims 1, 17, and 28 were rejected under 35 U.S.C. §102(b) as anticipated by Gupta et al. (Profile Guided Selection of ARM and Thumb Instructions). Claims 1, 17, and 28 recite a device or method of compiling a non-native software instruction to generate a first native software instruction from a first instruction set and, when the current frequency of execution associated with the first native software instruction exceeds a threshold during the execution of one or more programs associated with the first native software instruction, compiling the non-native software instruction to generate a second native software instruction from a second instruction set. Claims 1, 17, and 28 recite that the frequency of execution associated with the first native software instruction is determined a plurality of times during the execution of the one or more programs associated with the first native instruction by incrementing a counter in response to the execution of the first native software instruction.

In contrast, the system described by Gupta et al. performs a one-time identification of “hot spot” portions of code. In particular, Gupta et al. describe finding “frequently executed functions **once using profiling.**” (*Gupta et al, page 58, section 4*) (emphasis added). Gupta et al. do not repeatedly determine a frequency of execution associated with the instructions

being executed. Rather, at the onset of an experiment, Gupta et al. identify functions that “take up more than 5% of total execution time.” (*Gupta et al.*, page 58, section 4). Expectedly, because the instruction executions are measured against total execution time, the identification is only performed once.

Thus, the system described by Gupta et al. cannot provide, for example, a dynamic determination of which instructions should currently be considered for possible compiling into a second native instruction set (e.g., ARM code). Conversely, independent claims 1, 17, and 28 recite a plurality of determinations of the frequency of execution and, therefore, can provide continuous updates as to which instructions should be identified.

Further, the system described by Gupta et al. first identifies “hot spot” portions of code and then compiles non-native instructions into either Thumb or ARM codes. In particular, Gupta et al. states:

“The basic approach that we take for generating mixed code consists of two steps. First, we find the frequently executed functions once using profiling (e.g., gprof). These are functions which take up more than 5% of total execution time. Second we use heuristics for choosing between ARM and Thumb codes for these frequently executed functions. For all other functions, we generate Thumb code.”

(*Gupta et al.*, page 58, section 4). That is, the system described by Gupta et al. identifies frequently executed functions before compiling into native instructions and, therefore, inherently cannot identify “hot spot” functions based on native instruction execution. In contrast, claims 1, 17, and 28 recite determining a frequency of execution based on an execution of a native instruction.

For at least the reason(s) described above, Gupta et al. cannot anticipate independent claims 1, 17, and 28. Accordingly, the §102 rejections of claims 1, 17, and 28, and all claims dependent thereon should be withdrawn.

If the Examiner is of the opinion that a telephone conference would expedite the prosecution of this case, the Examiner is invited to contact the undersigned at the number identified below.

The Commissioner is hereby authorized to charge any deficiency in the amount enclosed (if any) or any additional fees which may be required during the pendency of this application to Deposit Account No. 50-2455.

Respectfully submitted,
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